**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

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|---|---|---|---|
| **Applicants:** | Tom A. Grigliatti, et al. | **Examiner:** | Nancy S. Vogel |
| **Serial No.:** | 09/896,888 | **Art Unit:** | 1636 |
| **Filed:** | June 29, 2001 | **Docket:** | 16365Z |
| **For:** | INSECT EXPRESSION VECTORS | **Confirmation No.:** | **3346** |

Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

**DECLARATION OF DR. TOM A. GRIGLIATTI**
**UNDER 37 C.F.R. §1.132**

Sir:

I, TOM A. GRIGLIATTI, hereby declare as follows:

1. I am one of the co-inventors of the above-identified application.

2. I hold a Bachelor of Science Degree in Biology, a Masters Degree in Cell and Molecular Biology and a Doctorate Degree in Genetics. My research interest is in the field of Genetics and Molecular Biology, and I have authored 100 publications in this field. Currently I am Professor at the Department of Zoology, University of British Columbia. A true and correct copy of my curriculum vitae is attached hereto as Exhibit A.

3. I have reviewed the above-identified application (hereinafter referred to as '888 application), and I am familiar with the subject matter therein. The '888 application is directed to shuttle vectors that are characterized by a selectable marker coding sequence, which is linked to a promoter region containing an insect cell promoter and a prokaryotic promoter. The selectable marker is expressed in insect cells and bacterial cells that are transformed with the shuttle vector, and confers a phenotype selectable in

both insect cells and bacterial cells. The vectors of the '888 application have the advantage of utilizing one marker that is effective for selection in both insect cells and prokaryotic cells.

4. I have also read the Final Action dated April 20, 2004, issued in the '888 application. It is my understanding that the Examiner holds the opinion that the vectors described in the specification are limited to those containing the zeocin resistance gene, and that the specification of the '888 application does not describe or provide guidance on the selection of other resistance marker genes that may function in both insect and prokaryotic cells.

5. Contrary to the Examiner's contention, I observe that the '888 application clearly states that the shuttle vectors can be adapted for use with a variety of antibiotic selection schemes, i.e., not limited to selection based on resistance to zeocin. See page 67, lines 20-21, for example.

6. The attached exhibits depict several vectors suitable for selection based on resistance to different antibiotics in both insect cells and bacterial cells.

7. Exhibit B depicts vector p2Zop2F, which is also described in Figure 8a of the '888 application. This vector contains the Opie2 insect promoter and the EM7 prokaryotic promoter, as well as the zeocin resistance gene (Zeo R). In addition to a zeocin selection scheme described in the '888 application, this vector has also been shown to be selectable based on resistance to phleomycin. For bacterial selection, 5 μg/ml phleomycin is added to LB medium and plates are incubated at 37 °C for 24 hrs. For insect cell selection, 25 μg/ml phleomycin is added to culture media and tissue culture plates are incubated at 27°C until reaching confluency.

8. Exhibit C depicts vector p2Hf, which contains the Opie2 insect promoter and the EM7 prokaryotic promoter, as well as the hygromycin resistance gene. The vector has been shown to be selectable based on resistance to hygromycin in both insect

cells and bacterial cells. For bacterial selection, 50 μg/ml hygromycin is added to low salt LB (10 g/l tryptone, 5 g/l yeast extract and 5 g/l NaCl) and plates are incubated at 37°C for 24 hrs. For insect cell selection, 750 μg/ml hygromycin is added to culture media and tissue culture plates are incubated at 27°C until reaching confluency.

9. Exhibit D depicts vector p2PaOp2F+EM7, which contains the Opie2 insect promoter and the EM7 prokaryotic promoter, as well as the puromycin resistance gene (PAC). This vector has been shown to be selectable based on resistance to puromycin in both insect cells and bacterial cells. For bacterial selection, 200 μg/ml puromycin is added to low salt LB and plates are incubated at 37°C for at least two days. For insect selection, 2 μg/ml puromycin is added to the media and tissue culture plates are incubated at 27°C until reaching confluency.

10. Exhibit E depicts vector p2Ba2F, which contains the Opie2 insect promoter and the EM7 prokaryotic promoter, as well as the blastacidin S resistance gene (Blast R). This vector has been shown to be selectable based on resistance to blastacidin S in both insect cells and bacterial cells. For bacterial selection, 100μg/ml blastacidin S is added to low salt LB and plates are incubated at 37°C for 24 hrs. For insect cell selection, 25 μg/ml blastacidin S is added to culture media and tissue culture plates are incubated at 27°C until until reaching confluency.

11. Exhibits F-H depict vectors p2Z2f-EM7, p2PaOp2F, and p2Ba2F-EM7, respectively. These are essentially the same as p2Zop2f, p2PaOp2F+EM7, and p2Ba2F, respectively, as discussed above, except that the EM7 promoter is not present on p2Z2f-EM7, p2PaOp2F, and p2Ba2F-EM7. The Opie2 promoter apparently is sufficiently active in both insect cells and prokaryotic cells to drive the expression of the selectable marker gene.

12. For bacterial selection based on p2Z2f-EM7, 25μg/ml zeocin is added to low salt LB (10 g/l tryptone, 5 g/l yeast extract and 5 g/l NaCl) and plates are incubated at 37°C until colonies appear which is generally 24-48 hours. For insect cell selection

based on p2Z2f-EM7, 750 μg/ml zeocin is added to culture media and tissue culture plates are incubated at 27°C until reaching confluency.

13. For bacterial selection based on p2PaOp2F, 200μg/ml puromycin is added to low salt LB (10 g/l tryptone, 5 g/l yeast extract and 5 g/l NaCl) and plates are incubated at 37°C until colonies appear which is generally 72 hours. For insect cell selection based on p2PaOp2F, 2μg/ml puromycin is added to culture media and tissue culture plates are incubated at 27°C until reaching confluency.

14. For bacterial selection based on p2Ba2F-EM7, 100μg/ml blastacidin S is added to low salt LB and plates are incubated at 37°C until colonies appear which is generally 48 hours. For insect cell selection based on p2Ba2F-EM7, 25 μg/ml blastacidin S is added to culture media and tissue culture plates are incubated at 27°C until reaching confluency.

15. I declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and that those statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

By: _____ Dated: Sept 15, 2004

**THE UNIVERSITY OF BRITISH COLUMBIA**
**PERSONAL DATA FORM**

**DEPARTMENT**: Zoology

Date of most recent revisions or verification of Data Form by faculty member (please initial):

July 2004

## 1. BIOGRAPHICAL DATA

**Name**: GRIGLIATTI, Thomas Anthony

**Rank**: Professor

**Date of Birth**: November 24, 1944

**Citizenship**: U.S.A. (Landed Immigrant in Canada)

## 2. EDUCATION

| Degree | Dates | Institution | Supervisor |
|---|---|---|---|
| UNDERGRADUATE | | | |
| B.S. Biology | 1962-66 | Santa Clara Univ. | |
| GRADUATE | | | |
| M.Sc. Cell & Molecular Biol. | 1967-68 | San Francisco State Univ. | Sarane T. Bowen |
| Ph.D. Genetics | 1968-71 | Univ. of British Columbia | D.T. Suzuki |

## 3. PROFESSIONAL EMPLOYMENT RECORD

**a) Teaching, professional or research positions held prior to U.B.C. appointment (indicate rank or title, dates and name of institution for each position held):**

| dates | title | Dept. & Institution |
|---|---|---|
| 1972 | PDF | Molec. Biophys. & Biochem., Yale Univ., New Haven, Conn., USA |
| 1973-75 | PDF | Biochem., Univ. of British Columbia |
| 1975-77 | Assistant Professor | Dept. of Zoology, Indiana Univ., Bloomington, Indiana, USA |

**b) Date of first appointment at The University of British Columbia:** July 1, 1977

**c) Rank at which first appointed:** Assistant Professor

**d) Subsequent ranks including dates of promotion:**
Assistant Professor - July 1, 1977
Associate Member, Dept. of Medical Genetics - June 1, 1980 - *current*
Associate Professor - July 1, 1982
Member, Molecular Genetics Center - July 1, 1982
Member, Biotechnology Laboratory Training Program - March 1988
Professor - July 1, 1988

**3 e) Date of granting of Appointment without Term:**

July 1, 1982

**f) Other professional appointments:**

| Position appointment | Organization | Dates of |
|---|---|---|
| President & CEO | InCell Expressions Systems, Inc. | 1999 – *current* |
| Vice-President & CSO | Neuro Therapeutics, Inc. | 2002 – 2003 |
| Associate | Canadian Genetic Diseases Network Centre of Excellence | 2000 – *current* |
| Member | ICORD (International Collaboration on Repair Discoveries) | 2000 - *current* |

**g) Record of leaves of absence (indicate dates, duration, type of leave, and whether paid or unpaid):**

None

**4. PROFESSIONAL ACTIVITIES (details and dates)**

**a) Academic or professional awards and distinctions:**

1972-74 Jane Coffin Childs Fellowship for Medical Research (declined)

1972-75 Helen Hay Whitney Postdoctoral Fellowship

2003-04 Killam Senior Research Prize

**b) Membership on editorial boards:**

1986-88 Associate Editor, Developmental Genetics

**c) Membership on peer review committees:**

Brock, H. (Zoology, UBC) - member of hiring committee; member of reappointment committee
Steeves, J. (Zoology, UBC) - member of promotion committee (Assoc. Prof.)
Moerman, D. (Zoology, UBC) - member of hiring committee
Jacobs-Lovena, M. (Anatomy & Cell Biology, Case Western Reserve Univ.) - External Reviewer, promotion (Assoc. Prof.) and tenure committees - 1986
Bell, J. (Genetics, Univ. of Alberta) - External Reviewer, promotion to Professor, 1988
Gass, C.L. (Zoology, UBC) - member of promotion committee (Prof.) 1989
Adamson, M. (Zoology, UBC) - Chair, hiring committee 1989
Cell Biology Faculty Position in Zoology - Chair, hiring committee
Steeves, J. (Zoology, UBC) - member of promotion committee - 1990
Arking, R. (Biology, Wayne State Univ.) - External Reviewer, promotion to Professor 1990
Head of Botany (UBC) - member of search committee - 1990
Head of Zoology (UBC) - member of search committee - 1991
NSERC Women's URF (Zoology, UBC) - member of search committee - 1991/92
Matsuuchi, L. (Zoology, UBC) - member of reappointment committee - 1992

**4 c) Membership on peer review committees - *continued. . . . :***

Snutch, T. (Biotechnology Lab., UBC) - Chair, reappointment committee - 1992
Berger, J. (Zoology, UBC) - Chair, promotion committee to Professor - 1992
Population Genetics Faculty Position in Zoology - Chair, hiring committee - 1994
Dr. R. Redfield, Reappointment Committee - 1994
Dr. L. Matsuuchi, Reappointment Committee - 1994
Dr. John Locke (Genetics, Univ. of Alberta) - External Reviewer, Tenure & Promo. to Assoc. Prof.1994
Dr. M. Adamson, Promotion Committee - 1995
Whitlock, Michael (Zoology, UBC) - Chair, hiring committee for Evolution/Pop./Genetics - 1995
Otto, Sara (Zoology, UBC) - Chair, - hiring committee for Theoretical Evolutionary Biol. - 1995
Matsuuchi, L. (Zoology, UBC) - Chair, Tenure and Promotion to Assoc. Prof. committee - 1996
Auld, V. (Zoology, UBC) - Reappointment Review Committee - 1996
Taylor, E. (Zoology, UBC) - Chair, Promotion to Assistant Prof. - Review Comm. - 1996/'97
Redfield, R. (Zoology, UBC) - Tenure and Promotion to Assoc. Prof - 1997
Whitlock, M. (Zoology, UBC) - Reappointment Review Committee – 1997
Lasko, P. – MRC Senior Scientist, McGill University - 1997
Dr. Barbara Wakimoto (Zoology, U. of Washington) External Reviewer, Promotion to Professor - 1997
Dr. Kent Golic (Biology, Univ. of Utah) External Reviewer, Tenure & Promotion to Assoc. Prof. - 1997
Dr. James Kennison (Natl. Institutes of Health) External Reviewer, Promotion to Research Scientist (= Assoc.Prof.) - 1997
Moerman, Donald(Zoology, UBC) Promotion Review Committee - Promotion to Full Professor - 1998
Whitlock, M. (Zoology,UBC) Chair, Tenure and Promotion Committee -1999
Tetzlaff W. (Zoology, UBC) Promotion to Professor - 1999; assumed Chair, Brock on sabbatical
Gass, L. (Zoology, UBC) Promotion to Professor – 1999
Ellis, James - Senior Scientist (equiv. to professor) Hospital for Sick Children, Toronto -2000
CHORD Assist. Prof. Hiring Committee - 2000
Auld, V., Tenure and Promotion Committee – 2000
Kasinsky, H. Promotion to Professor – 2001/2002
Pante, N. Review for re-appointment as Assistant Professor – 2002/2003
Weiler, Karen (Idaho State University) Tenure and Promotion to Associate Professor 2003
Duttaroy, Atanu (Howard University) Tenure and Promotion to Associate Professor 2003

**d) Positions as officer in professional societies:**

Canadian Society of Zoologists - - Best Ph. D. Thesis Awards Committee

Candadian Federation of Biological Societies

1993-1995 CFBS Executive Committee, Genetics Society of Canada Representative

Genetics Society of America

1991-95 Member, Board of Directors Genetics Society of America,

Genetics Society of Canada

1983-85 Director, Genetics Society of Canada

1985-87 Chairman, New Initiatives Committee, Genetics Society of Canada

1986-88 Nominations Committee, Genetics Society of Canada

1991-93 Vice-President of Genetics Society of Canada

1993-95 President of Genetics Society of Canada

1995-96 Past-President, Genetics Society of Canada (Member of Executive)

1996-98 Future Directions Committee, GSC

**e) Professional consultancies:**

| | |
|---|---|
| 1972 - '73 | Committee to Combat Huntington's Disease (Scientific Advisor) |
| 1980 | Consultant for Open Learning Institute (declined) |
| 1980 – '96 | Member of Executive, Genetics Graduate Programme, UBC |
| 1992 | NATO Survey Group on Developmental Biology, Brussels, Belgium |
| 1993 - '96 | MRC Grant Council, Genetics |
| 1994 –'99 | International Fisheries Gene Bank |
| 1997- *current* | NASA and Canadian Space Agency, Space Station - Science Lab Advisor |
| 2000- *'04* | Research Technologies Corporation, Inc. |
| 2001 – '02 | Sedicim Pharmaceuticals, Inc. |
| 2001- *current* | Dendreon Pharmaceuticals, Inc. |
| 2002 – *'03* | Neuro Therapeutics, Inc. |

**f) National and international conferences and symposia organized:**

| | |
|---|---|
| 1979 | Chairman, Behavioral and Developmental Genetics Session, US/Canadian Genetics Society Meetings |
| 1980 | Chairman, Biochemical Genetics Session, Genetics Society of America Meeting |
| 1981 | Co-chairman, Developmental Genetics Session, Genetics Society of America Meeting |
| 1983-84 | Organizer, Joint US/Canadian Genetics Societies Meeting, held at UBC, 1984 |
| 1985-88 | Organizer, Genetics Society of Canada National Lectureship Series |
| 1986-88 | Program Committee, XVI International Congress of Genetics |
| 1988 | Workshops Organizer, Developmental Genetics, International Congress of Genetics XVI |
| 1989-90 | Program Committee, joint US/Canadian Genetics Society Meetings July 1990 |
| 1994-95 | Genetics Society of Canada and Drosophila Genetics Joint Meetings co- organizer, Quebec |
| 2000 | Organizing Committee, joint US/Canadian Genetics Society Meetings, Vancouver |

**g) Invited symposia lectures:**

| | |
|---|---|
| 1984 | Symposium Speaker and Chairperson, Chromatin Structure and Gene Expression, North American Drosophila Meeting |
| 1985 | Symposium Speaker, Genes in Development, Canadian Congress of Biology |
| 1986 | Symposium Speaker, Brookhaven Symposia in Biology XXXIV, Aging Process in Animals |
| 1988 | Symposium Speaker, Jackson Laboratory Symposia on the Genetics of Aging |
| 1988 | Symposium Speaker, XVIII International Congress of Entomology, Vancouver, B.C. |
| 1988 | Symposium Speaker, North American Drosophila Meetings |
| 1989 | Symposium Speaker, Gerontological Society of America Annual Meeting |
| 1990 | Symposium Speaker, EMBO International Meeting on Chromosome Structure; Italy |
| 1993 | Symposium Speaker, Insect Biotechnology Meeting |
| 1994 | Symposium Speaker, 7th International Symposium on the Genetics of Industrial Microorganism; Montreal |
| 1994 | Symposium Speaker, Molecular Biology in Systematics and Biodiveristy, Insect Molecular Biology and Biotechnology Meetings; Toronto |
| 1995 | Symposium Speaker, International meetings on Chromosome Structure; Hawaii, U. S. A. |
| 1996 | Symposium Speaker, Insect Biotechnology Meetings; Toronto |
| 1996 | Symposium Speaker, Chromatin Meetings, Tahoe Calif. (sent Res. Assoc. Dr. S. Ner; I was unable to travel due to by-pass surgery) |
| 1996 | Symposium Speaker, Pacific Rim Biotechnology Meetings; Bangkok, Thailand |
| 1997 | Symposium Speaker, Canadian Drosophila Genetics Meeting; Whistler, B. C. |
| 1997 | Symposium Speaker, EMBO International Meeting on Chromatin Structure; Cortona, Italy |
| 1997 | Symposium Speaker, Biotechnology Conference; Toronto |
| 1997 | Symposium Speaker, International Lepidoptera Molecular Biology Conference; Crete |

1998 Symposium Speaker, Society for Experimental Biology; York, England
1998 Symposium Speaker, Biotechnology Conference, Niagra-on-the-Lake, Ontario
1999 Symposium Speaker, Bio 99 Conference, Seattle Washington,

**g) Invited symposia lectures.....*continued***

1999 Symposium Speaker, Molecular Pharming Conference, Guelph Ontario
1999 Symposium Speaker, Int. Meeting on Chromatin Structure & Gene Regulation, New York
1999 Symposium Speaker, Entomological Society of Canada Meeting,
2000 Symposium Speaker, International Biotechnology Conf. June, 2000
2000 Symposium Speaker, Current Topics in Gene Expression, Sept. 2000 - San Diego, Cal, USA
2001 Symposium Speaker, EMBO International Chromatin Meeting Cortona, Italy June
2001 Symposium Speaker, NATO International Workshop, Enhancing Biocontrol Agents and handling risks Florence, June
2003 Symposium Speaker, 6th International Chromatin Structure and Gene Regulation; Ravello, Italy
2004 Symposium Spearker, Wialliamsburg Foundation, Baculovirus and Insect Cell Culture Savannah, Georgia, February
2004 Symposium Speaker, IBC 9th International Conference on Receptors, San Diego Calif., Oct.
2005 Symposium Speaker, International Conference on Chromatin Structure and Function,

**h) Invited lectures**

1978 Invited Lectureship, Washington Univ., St. Louis, MO (Developmental Genetics)
1979 Invited Lecture, Univ. of Saskatchewan
1980 Invited Lecture, Univ. of Victoria
1984 Heritage Scholar Lecturer, Univ. of Alberta
1985 Invited Lecture, Univ. of Washington
1986 Heritage Scholar Lecturer, Univ. of Calgary
1988 Heritage Scholar Lecturer, Univ. of Alberta
1989 Invited Lecturer, Univ. of Ottawa
1989 Distinguished Lecturer Series - Molecular, Cell & Developmental Biology Program, Iowa State Univ.
1991 Invited Lectureship, Washington Univ., St. Louis, Mo. (seminar and 2 lectures)
1992 Invited Lectureship, Institute of Molecular and Cell Biology, Laval Univ., Ste. Foy, Quebec (seminar and 2 lectures)
1994 Invited Lecture, Queen's University
1994 Invited Lecture, University of Toronto
1995 Invited Lecture, Martin Luther Univ., Halle, Germany
1995 Invited Lecture, Univ. of Berlin, Germany
1995 Invited Lecture, McGill University
1996 Invited Lecture, Genetics Program, UBC
1999 Invited Lecture, Univ. of Saskatchewan
2000 Invited Lecture, Dendrion Pharmaceuticals, Seattle Washington
2001 Invited Lecture, University of Nebraska, Lincoln Nebraska
2001 Industrial Research Technology Institute Taipei, Taiwan
2002 Heritage Scholar Lecture, University of Alberta
2003 Invited Lecture, Dendrion Pharmaceuticals, Seattle, Washington
2003 Invited Lecture, Dalhousie University
2004 IBC, Drug Discovery Series 9th International Meeting: GPCRs San Diego, California

**i) List all funded research awards, including source, and subject. Please list co-investigators where appropriate.**

1978-79 NAHS Grant ..... $5,000
1978-79 UBC NSERC Equipment Grant..... 13,000
1979-82 NSERC Grant with D.T. Suzuki ..... 71,000 /annum

1979-80 NAHS Grant.....5,000
1979-80 Banting Research Foundation.....3,300
1979-81 B.C. Health Care Research Foundation.....21,000
1979-80 UBC NSERC Equipment Grant.....3,900
1980-81 NAHS Grant.....4,000

i) **List all funded research awards - *continued* . . . . .**

1980-81 UBC NSERC Equipment Grant.....5,000
1981-84 NSERC Strategic Grant.....49,000 /annum
1982-85 NSERC Team Grant (with D.T. Suzuki).....60,000 /annum
1982-85 National Institute of Health Grant (USA).....80,000 /annum
1983-85 NSERC Strategic (H. Brock co-investigator).....63,000 /annum
1984 NSERC Strategic Equipment (with H. Brock).....28,100
1984 NSERC Equipment Grant.....20,142
1985-88 NSERC Operating Grant.....57,000 /annum
1986 UBC-NSERC Equipment Grant.....6,800
1986 NSERC Equipment Grant.....9,000
1986 UBC-NSERC Equipment Grant.....33,000
1986 UBC-Research Development Fund (with H. Brock).....44,000
1986-88 NSERC Strategic Grant.....42,700 /annum
1987-90 MRC Grant (G. Spiegelman co-investigator).....67,000 /annum
1988-91 NSERC Operating Grant.....63,200 /annum
1989 NSERC Equipment Grant.....24,000
1990-93 NCI Operating Grant.....86,000 /annum
1990-94 Centres of Excellence, Insect Biotechnology.....120,000 /annum
1991-92 NSERC Scientific Exchange Award.....9,000
1991-96 NSERC 5-Year Operating Grant.....86,600 /annum
1993 NSERC Conference Grant (Genetics Society of Canada).....7,500
1993-95 B.C. Science Council.....75,000 /annum
1993-96 NCI Operating Grant (with G. Spiegelmen, Microbiology).....95,000 /annum
1994 NSERC, Equipment Grant.....15,000
1994-97 NSERC, Strategic Grant.....101,000 /annum
1995-96 Agriculture Canada Grant.....28,000 /annum
1995-96 DuPont USA Grant (with John Gosline - clone spider silk genes) 34,000 /annum
1996-97 NCI Operating Grant (with G. Spiegelman, Microbiology).....48,000 /annum
1996-97 NSERC Operating Grant (extension for 1 year).....86,600 /annum
1996-99 MRC Operating Grant.....86,292 /annum
1997-99 NSERC Operating Grant.....46,600 /annum
1997-99 Kinetek Pharmaceuticals Research Grant.....20,000 /annum
1997-2000 NSERC Strategic Grant.....98,867 /annum
1998-2000 B.C.Health Research Foundation Grant.....49,100 /annum
1998-1999 Astra Pharmaceutical Research Grant.....44,160 /annum
1999-2002 Canadian Space Agency (with A.G. Lewis).....50,000 /annum
1999-2004 NSERC Operating Grant.....59,450 /annum
2000 NSERC Equipment Grant.....29,645
2000 B.C. Ministry of Adv. Education and Training.....24,000
2001-2004 NSERC Strategic Grant.....165,500 /annum
2001-2006 CIHR - Interdisciplinary Health Research Team Grant
(Dr. Jeanette Holden, Queen's University, Team Leader).....832,000 /annum
2001 CGDN Strategic Project Grant.....66,560 /annum
2001 NSERC Equipment Grant (Cell Biology Group).....79,358
2001-'02 InCell Expression Systems, Inc. (contract).....46,180
2002- Neuro Therapeutics, Inc. (contract).....526,223 /annum
2002 CFI ICORD fund (Dr. John Steeves, Group Leader).....12,900,000
2002-'03 CIHR Proof of Principle.....100,000 /annum
2002-'05 NCIC Operating.....111,200 /annum

2003-'04 CIHR Operating (Co_PI with Wayne Riggs, Pharmaceutical Sci).....74,403 /annum
2004-'05 B.C. Neurotrauma Grant.....40,000 /annum
2004-'09 NSERC Discovery Grant .....60,980 /annum
2004-'07 CIHR Operating (Co- with Wayne Rigss, Pharmaceutical Sci).....148,130 /annuma

**j) Professional personnel who are or have worked with you: (Please note degree awarded & dates)**

**a) Graduate students (M.Sc. or Ph.D.)**

**Ph.D.** Previous

| | |
|---|---|
| B. Devlin (Grigliatti/Holm Co-supervisors) | Completed (Feb/'86) |
| J. Leung | Completed (Feb/'88) |
| N. Clegg | Completed (Dec/'91) |
| I. Whitehead | Completed (Feb/'93) |
| V. Lloyd | Completed (May/'95) |
| J. Whalen | Completed (April/'99) |
| G. Meister | Completed (Oct/'99) |
| M. Harrington | Completed (Aug/2000) |
| R. Mottus | Completed (April/2003) |

**M.Sc.** Previous

| | |
|---|---|
| G. Moore | Completed (Dec. '80) |
| R. Mottus | Completed (Sept. '83) |
| K. Fitzpatrick | Completed (Sept. '85) |
| M. Richter | Completed (Oct. '86) |
| D. Henderson | Completed (Aug. '87) |
| J. Brock | Completed (June '89) |
| A. Hedrick | Completed (Apr. '89) |
| R. Wennberg | Completed (Mar. '89) |
| B. Hansen | Completed (Apr. '91) |
| G. Meister | Completed (Apr. '92) |
| R. Burr | Completed (May '95) |
| E. James | Completed (Feb. '99) |
| G. Kwon | Completed (Dec. '01) |
| J. McNamee | Completed (June.'02) |
| L. Harvey | Completed (Dec. '02) |
| A. Carvalho | Completed (Jan. '03) |

**Ph.D.** Current
Greg Doheny
Pamela Kalas

**M.Sc.** Current
Omid Taub

**b). B.Sc. Honours Students** (Thesis Research)

| Previous | | Current Position/Occupation |
|---|---|---|
| Randy Mottus | Completed (Apr./79) | LL.B (law); now Ph.D. student |
| David Leffelaar | Completed (Apr./81 ) | Faculty Member, Trinity U. |
| Tammie Leung | Completed (May/84) | M.D. |
| Nick Harden | Completed (May/85) | Assoc. Prof., S.F.U. |
| Yvette Lloyd | Completed (May/86) | Assist. Prof., Dalhousie U. |
| Joanne Brock | Completed (May/86) | M.D./Ph.D. |
| Ian Whitehead | Completed (May/87) | Assoc. Prof., Rutgers Univ. |

| | | |
|---|---|---|
| Thien-Ly Nguyen | Completed (Apr./98) | |
| Andrea Procter | Completed (Apr./99) | M.D. student, U.B.C. |
| Tara Collins | Completed (Apr./99) | Researcher, Ont. Cancer Research |
| Tyler Simpson | | (NSERC Summer Fellowship) |

**j) Professional personnel who are or have worked with you . . . . . *continued***

**c) Post-doctoral Fellows**

| Previous | Present Position |
|---|---|
| Dr. Barry Malchi (1983) | |
| Dr. Rosemary Shade (1985) | Associate Prof, U. Wisconsin |
| Dr. Allana Ruddell (NSERC Fellow) (1984-87) | Associate Prof., U. Syracuse |
| Dr. James Williams (Killam Fellow) (1989-91) | Biotechnology Industry, USA |
| Dr. Mark Ring (NCE Fellow) (1991-94) - | Res. Associate, Agriculture Canada |
| Dr. Dwayne Hegedus (NSERC Fellow 1995-97 ) | Staff Scientist, Agricult. & Agri-food Canada |
| Dr. Richard Sobel (1995-97) - | Staff Scientist at Prostate Cancer Center |
| Dr. Thomas Pfeifer (NCE Fellow 1993-94); NSERC Fellow 1994-96) – NeuroTherapeutics, Inc. | |
| Dr. Peter Knight (Killam Fellow 1997- 1999; Res. Assoc. 200-2002) – NeuroTherapeutics, Inc. | |

Current

Dr. Randall Mottus

**d) Research Associates**

| Previous | Present Position |
|---|---|
| Dr. Donald Sinclair (1982-'90) | Research Assoc with B. Honda at SFU |
| Dr. Robert Camfield (1987-'89) | Professor, Capillano College |
| Dr. Robert Lansman (1984-'91) | Prof., U. Wisconsin, |
| Ms. Annie Bokova (M.Sc.) (1993-'97) | Investment Analyst |
| Mr. Jerry Hedry (M. Sc.) (1995-'97) | UBC Medical School - student |
| Mr. Randy Mottus (M.Sc. & LL.B.) (1989-'97) | Post-doctoral Fellow, UBC |
| Mr. Mike O'Grady (M.Sc.) (1990-1998) | Research Scientist at Promega, Inc. |
| Ms. Sonal Brambhat (2001-2003) | Res. Assoc. at Prostate Cancer Res. Center |
| Mr. Dean Mulyk (2002-2004) | Res. Sci. at BRI, Montreal |
| Mr. Layne Harvey (200302004) | Medical School, UBC |

Current

Dr. Craig Berezowsky

Dr. Sarbjit Ner

Dr. Thomas Pfeifer

**e) Sabbatical Visitors**

| Name | Year(s) | Name | Year |
|---|---|---|---|
| Dr. John Tonzetich | 1985-86 | Dr. Gunter Reuter | 1994 |
| Dr. Ashish Duttagupta | 1982, and 1989 | Dr. Veiko Krause | 1995 |
| Dr. Michael Bentley | 1988 | Dr. Andrew Hobbs | 1995 |

| | | | |
|---|---|---|---|
| Dr. Gunter Reuter | 1991 | Dr. Maria Pérez-Parallé | 1995 |
| Dr. G. Kchachatourians | 1992 | Dr. Ingrid Faye | 1998 |

k) **Teaching responsibilities:**
**(Course/section, enrollment, laboratory content, contact hours, teaching assistance associated with course or section (T.A., marking, materials preparation, etc.) Please include 448/449).**

**Biol. 201: Introductory Biochemistry** (3 lectures/week; 1 semester) (1/3 time)

| Year | Students | T.A.s |
|---|---|---|
| 1992 | 155 | 2 |

**Biology 334 Introductory Genetics** (3 lect./week each course; given in Fall of the year)

| Years | Students | T.A.s |
|---|---|---|
| 1985-86 | 268 | 4 |
| 1986-87 | 268 | 4 |
| 1987-88 | 280 | 5 |
| 1988-89 | 475 | 8 |
| 1989-90 | 565 | 11 |
| 1990-91 | 472 | 11 |
| 1991-92 | 475 | 11 |
| 1992-2000 | >500 | 10-13 |
| 2001-present | >600 | 10 |

**Biology 335: Introductory Molecular Genetics** (3 lect./week each course; given in Spring of the year)

| Years | Students | T.A.s |
|---|---|---|
| 1985-86 | 268 | 4 |
| 1986-87 | 268 | 4 |
| 1987-88 | 280 | 5 |
| 1988-89 | 475 | 8 |
| 1989-90 | 565 | 11 |
| 1990-91 | 472 | 11 |
| 1991-92 | 475 | 11 |
| 1992-present | >500 | 9-10 |

**Biology 337: Genetics Laboratory Course** (6 hours/week/section; 1 semester)

| Year | Student | T.A. ($^1/_2$ - time each) |
|---|---|---|
| 1985-86 | Enrollment limited by room =27 | 2 |
| 1986-87 | always full | 2 |
| 1987-88 | 2 sections/wk. | 2 (12 hours/wk total, @ 6hr/wk/section) |
| 1988-89 | 2 sections/wk. (both full) | 2 |
| 1989-90 | 2 sections/wk. (both full) | 2 |
| 1990-91 | 2 sections/wk. (both full) | 2 |
| 1991-92 | 2 sections/wk. (both full) | 2 |
| 1992-94 | 2 sections/wk. (both full) | 2 |
| 1994-95 | 2 sections/wk. (both full) | 3 |
| 1995-96 | 2 sections/wk. (both full) | 3 |
| 1997-98 | 2 sections/wk. (both full) | 3 |
| 1997-98 | 2 sections/wk. (both full) | 3 |

| | | |
|---|---|---|
| 1995-96 | 2 sections/wk. (both full) | 3 |
| 1997-98 | 2 sections/wk. (both full) | 3 |
| 1997-98 | 2 sections/wk. (both full) | 3 |
| 1998-99 | 2 sections/wk. (both full) | 3 |

**Biology 448**: **Idependent Research** (full academic year course = 2 semesters; 6 units/student)

| Year | Student name | further education |
|---|---|---|
| 1985-86 | W. Blair | (went on to M.Sc., McGill) |
| | JoAnn Brock | (went on to M. Sc., UBC; Ph.D., U. North Carolina) |
| | Andrew Leask | (went on to Ph.D., U. Chicago) |

**Biol.ogy 448**: **Idependent Research** (full academic year = 2 semesters; 6 units/student) *continued* . . . .

| | | |
|---|---|---|
| 1986-87 | C. Taylor | (went on to M.Sc.) |
| | Susan Minnaker | (went on to M. Sc., U. of Alberta) |
| 1987-88 | Vivian Ngan | (went on to Ph.D., Wesleyan U.) |
| | Claudia Salinas | (went on to M.Sc., U.B.C.) |
| 1988-89 | Tristan White | |
| 1989-90 | Charles Abel | (went to Med. School) |
| | Minto Vig | (went on to M.Sc., U.B.C.) |

| Year | Student name | further education |
|---|---|---|
| 1990-91 | Heather Jenkins | (went to Med. School, U.B.C.) |

1991-92 8 students - all were full year

| | |
|---|---|
| Grant Sparrow | Clinton Teng |
| Dave Dyment | Layne Harvey |
| Barney Lee | Gwen Mahon |
| Agela Rivers | Greg Roth |

1992-93 6 students - all were full year (6 credits)

| | |
|---|---|
| Dave Dyment | Galeep Lalee |
| Chris Lee | Charles Warrington |
| Layne Harvey | Steve Bakbazuk |

1994-95 13 students - all were full year (6 credits each)

| | |
|---|---|
| Dave Bechtold | Angela King |
| Joe Campbell | Jim Kwok |
| Kim Currie | Kim MacDonald |
| Tasjeem Hameer | Tamiko Musgrove |
| Erick James | Mariko Tomagane |
| Manahaz Kermati | Pat Whalen |
| Caucer Wong | |

1995-96 9 students - all were full year (6 credits each)

| | | |
|---|---|---|
| Alvar Carlson | Yuyu Hii | |
| Manpreet Jasal | Robert Kingland | |
| Fayaz Mawani | Mariko Moniwa Seung Park | Brian Rostek |
| Elizabeth Yew | | |

1996-97 4 students - all were full year (6 credits each)

David Barr
Christopher Murawsky
Susan Leong-Sit

Gina Kwon

1997-98 7 students - all were full year (6 credits each)

| | |
|---|---|
| Carvallo, Bella | Kwon, Gina |
| Doheny, Greg | Lam, Dawn |
| Gill, Parveen | O'Dor, Ester |
| Tsai, Judy | |

1998-99 Harvey, Layne (enrolled in M.Sc. program)

1999-2000 Yeh, Nancy (Customs & Immigration Canada)

2001-2002 Tsang, Royal (medical school)

**Biol.ogy 448**: **Idependent Research** (full academic year = 2 semesters; 6 units/student) *continued . . .*

2002-2003 Alvarez, Barbara
Mis, Jacek

2003-2004 6 students - all were full year (6 credits each)

| | |
|---|---|
| Duthie, Kia | Mis, Jacek |
| McEvoy, Patrick | Modesto, Dan |
| Min, Yoohee (Joy) | Wheeler, Lee |

**Biol. 449**: (Honour's Students - Thesis)

| Year | Student | further education |
|---|---|---|
| 1978-79 | Randy Mottus | (M. Sc. and L.L.B. at UBC) |
| 1980-81 | David Leffelaar | (M. Sc.) |
| 1983-83 | Tammy Leung | (Medical School, UBC) |
| 1984-85 | Nick Hardin | (Ph.D., Oxford U.) |
| 1985-86 | JoAnn Brock | (M. Sc. UBC, and Ph. D. at U. North Carolina) |
| 1985-86 | Yvette Lloyd | (Ph.D., U.B.C.) |
| 1986-87 | Ian Whitehead | (Ph.D., U.B.C.) |
| 1988-89 | Peter Choi | (Med. School, U.B.C.) |
| 1989-90 | Mike Harrington | (Ph.D., U.B.C.) |
| 1996-97 | Chris Murawsky | (Ph. D., McGill Univ.) |
| 1997-98 | Thien-Ly Nguyen | |
| 1998-'99 | Tara Collins | (Researcher @ Ontario Cancer Res. Ctr.) |
| | Anrea Procter | (Med. School, U.B.C.) |
| 2004-'05 | Tyler Simpson | |

**Biol. 508**: (3 units = 2 hrs/week; full year)

| Year | Students | Year | Students |
|---|---|---|---|
| 1985-86 | 7 | 1992-93 | 9 |
| 1986-87 | 8 | 1993-94 | 8 |
| 1987-88 | 9 | 1994-95 | 7 |
| 1988-89 | 7 | 1995-96 | 7 |
| 1989-90 | 6 | 1997-98 | 5 |
| 1990-91 | 7 | 1998-99 | 6 |
| 1991-92 | 7 | | |

**Genetics 502** (12 contact hours - lecturing)

Years

1985-91 course enrollment varied from 18 to 30 students

**Medicine 590 (Cell Biology Graduate Course)**

- 1 week/yr. course enrollment is about 15 to 20 students per year

## 5. SERVICE:

### a) Departmental Service

1. Member of Supervising Committee:

| Name | Degree | Supervisor | Status |
|---|---|---|---|
| Clark, Geoffrey A. | M.Sc. | Dehnel, R. | Completed |
| Johnson, Carey | M.Sc. | Holm, D. | Completed |

**5. a) Departmental Service.....*continued***

Member of Supervising Committee.....*continued*

| Name | Degree | Supervisor | Status |
|---|---|---|---|
| Wong, David T.L. | M.Sc. | Suzuki, D. | Completed |
| Tattersall, Philippa | M.Sc. | Holm, D. | Completed |
| Marchant, Gary | Ph.D. | Holm, D. | Completed |
| Button, Linda | M.Sc. | Estell. C. (Biochemistry) | Completed |
| Cserjesi, Peter | M.Sc. | Reeves, R. | Completed |
| Chan, Isaac | M.Sc. | Stich, H. (Cancer Research) | Completed |
| Larsen, Trina | M.Sc. | Miller, R. (Microbiology) | Completed |
| Myers, Caroline | Ph.D. | Griffiths. A. (Botany) | Completed |
| Peters, John | M.Sc. | Griffiths, A. (Botany) | Completed |
| Irwin, David | Ph.D. | McGillivray, R. (Biochemistry) | Completed |
| Newton, Craig | M.Sc. | Tener, G. (Biochemistry) | Completed |
| Firth, James | M.Sc. | Holm, D. | Completed |
| Rasmussen, Colin | M.Sc. | Berger, J. | Completed |
| Freeman, Douglas | M.Sc. | Brock, J. | Completed |
| Ching, Ada | M.Sc. | Berger, J. | Completed |
| Pitts, Ronald | Ph.D. | Berger, J. | Withdrew |
| Sajjadi, Ferreydoun | M.Sc. | Spiegelman, G. (Microbiology) | Completed |
| Horvath, Dan | M.Sc. | Spiegelman, G. (Microbiology) | Completed |
| Stewart, Susan | Ph.D. | Smith, M. (Biochemistry) | Completed |
| Vickery, Dan | Ph.D. | Griffiths, A. (Botany) | Completed |
| Peters, Ken | Ph.D. | Rose, A. (Medical Genetics) | Completed |
| Wolfe, Cori | M.Sc. | McPherson, J. (Botany) | Completed |
| Sajjadi, Ferreydoun | Ph.D. | Spiegelman, G. (Microbiology) | Completed |
| DeCamillis, Mark | Ph.D. | Brock, H. (Zoology) | Completed |
| Rhametullah, Shamsa | M.Sc. | Berger, H. (Zoology) | Completed |
| Stringham, Eve | Ph.D. | Candido, P. (Biochemistry) | Completed |
| Mathews, Kathy | M.Sc. | Tener, G. (Biochemistry) | Completed |
| Kim, James | M.Sc. | Holm, D. (Zoology) | Completed |
| Panno, Joe | Ph.D. | Spiegelman, G. (Microbiology) | Completed |
| Daly, Mark | Ph.D. | Brock, H. (Zoology) | Completed |
| Gilchrist, Erin | Ph.D. | Moerman, D. (Zoology) | Completed |
| Li, Gang | Ph.D. | Stich, H. (Cancer Research) | Completed |
| Mitchell, Heather | M.Sc. | Wood, S. (Medical Genetics) | Completed |
| Pachal, Richard | M.Sc. | Spiegelman, G. (Microbiology) | Completed |
| Seto, Nina | Ph.D. | Tener, G. (Biochemistry) | Completed |

| | | | |
|---|---|---|---|
| Tang, Liren | Ph.D. | Berger, J. (Zoology) | Completed |
| Forsythe, Ian | M.Sc | Theilmann, D. (Zoology) | Completed |
| Chua, Gordon | M.Sc. | Berger, J. (Zoology) | Completed |
| Dragger, Randy | Ph. D. | Juirloff, D. (Medical Genetics) | Completed |
| Zhou, Hong | Ph.D. | Berger, J. (Zoology) | Completed |
| Adl, Mike | Ph.D. | Berger, D. (Zoology) | Completed |
| Guerette, Paul | Ph.D. | Gosline, J. (Zoology) | Completed |
| Milne, Tom | M. Sc. | Brock, H. (Zoology) | Completed |
| Taylor, Lydia | M. Sc. | Juriloff, D. (Medical Genetics) | Completed |
| Sepp, Katherine | Ph. D. | Auld, V. (Zoology) | Completed |
| Fisher, Cynthia | Ph. D. | Brock, H. (Zoology) | In progress |
| Wang, Yingung | Ph.D. | Brock, H. (Zoology) | Completed |
| Chow, Jennifer | Ph.D. | Brown, C. (Medical Genetics) | In progress |
| Savage, Kenneth | Ph.D. | Gosline, J. (Zoology) | In progress |
| Pathakamuri, Ajay | Ph.D. | Theilmann, D. (Plant Sciences) | Completed |
| Landry, Josette-Renee | Ph.D. | Maeger, D. (Med. Genetics/Cancer Res.) | Completed |

5. a) **Departmental Service.....*continued***

Member of Supervising Committee.....*continued*

| Name | Degree | Supervisor | Status |
|---|---|---|---|
| Huijskens, Ilse | Ph.D. | Theilmann, D. (Plant Sciences) | In progress |
| Kwon, Ed | Ph.D. | Brown, C. (Medical Genetics) | Completed |
| Yeung, Lillian | M. Sc. | Rennie, P. (Pathology & Lab. Medicine | In progress |
| Stein, Jake | Ph. D. | Devlin, J (Zoology & Fish & Oceans Can.) | In progress |
| Johnson, Laura | Ph.D. | Jeffries, W. (Biotechnology Lab) | Completed |
| Joyce, Tan | M. Sc. | Brock, H. (Zoology) | In progress |
| Chittaranjan, Suganthi | Ph.D. | Mara, Marco (B.C. Genome Centre) | In progress |
| Spinelli, Egidio | M. Sc. | Tetzlaff, Wolfram (ICORD, Zoology) | In progress |
| Thorogood, Nancy | M. Sc. | Brown, Carolyn (Medical Genetics) | In progress |
| Tymchuk, Wendy | Ph.D. | Devlin, R. (Zoology & Fish & Oceans Can) | In progress |

Examination Committees

| M.Sc. | Name | Supervisor | Department |
|---|---|---|---|
| | Peacock, D. | (McPhail, Supervisor) | Zoology |
| | Nomura, D. | (Wilimovsky, Supervisor) | Zoology |
| | Tattersall, P. | (Holm, Supervisor) | Zoology |
| | Williams, D.C. | (Carefoot, Supervisor) | Zoology |
| | Jones, James | (Wellington, Supervisor) | Zoology |
| | Clark, G.A. | (Dehnel, Supervisor) | Zoology |
| | Billy, Allen J. | (Liley, Supervisor) | Zoology |
| | Chan, Isaac | (Stich, Supervisor) | Cancer Research |
| | Rasmussen, Colin | (Berger, Supervisor) | Zoology |
| | Newton, Craig | (Tener, Supervisor) | Biochemistry |
| | Sajjadi, F. | (Spiegelman, Supervisor) | Microbiology |
| | Glen, David | (Brooks, Supervisor) | Zoology |
| | Bandoni, S. | (Brooks, Supervisor) | Zoology |
| | Popatia, S. | (Perks, Supervisor) | Zoology |
| | Firth, James | (Holm, Supervisor) | Zoology |
| | Starr, Terry | (Woods, Supervisor) | Medical Genetics |
| | McClennan, Deborah | (McPhail, Supervisor) | Zoology |
| | Vellani, Tia | (Griffiths, Supervisor) | Botany |

| | | |
|---|---|---|
| Huggard, David | (Sinclair, Supervisor) | Zoology |
| Harris, Michael | (Milsom, Supervisor) | Zoology |
| Makihara, David | (Wood, Supervisor) | Medical Genetics |
| Henderson, Karen | (Wood, Supervisor) | Genetics |
| Huggard, David | (Sinclair, Supervisor) | Zoology |
| Makihara, D. | (Kalousek, Supervisor) | Medical Genetics |
| Ostlin, Janice | Jones, Supervisor | Zoology |
| Milne, Tom | Brock, Supervisor | Zoology |
| Stilwell, Katherine | Tetzlaff, Supervisor | Zool./Neurosci. Prog. |
| Poon, Art | Otto, Supervisor | Zoology |
| Frid, Leonardo | Myers, Supervisor | Zoology |
| Elliot, Nicole | Jones, Supervisor | Zoology |
| Mohseni, Kasra | Teh, Supervisor | Microbiology |
| Jarrett. Jeffrey | Scudder, Supervisor | Zoology |

**5. a) Departmental Service.....*continued***

Ph.D. *a) Qualifying Exams*

| Name | Supervisor | Department |
|---|---|---|
| Devlin, R. | Grigliatti/Holm, Supervisors | Zoology |
| Marchant, G. | Holm, Supervisor | Zoology |
| Wu, Chung I. | Wehrhahn, Supervisor | Genetics |
| Woodend, J. | Person, Supervisor | Genetics |
| Dippel, E. | Stich, Supervisor | Zoology |
| Pope, D. | Person, Supervisor | Genetics |
| Irwin, D. | McGillivray, Supervisor | Genetics |
| Myers, C. | Griffiths, Supervisor | Genetics |
| Pitts, R. | Berger, Supervisor | Zoology |
| DeCamilis, M. | Brock, Supervisor | Genetics |
| Joshi, Phalgun | Dennis, Supervisor | Genetics |
| Gilchrist, E. | Moerman, Supervisor | Zoology |
| Adl, S. | Berger, Supervisor | Zooogy |
| Tang, Liren | Berger, Supervisor | Zoology |
| Milne, Tom | Brock, Supervisor | Zoology |
| Landry, Josette-Renee | Maeger, Supervisor | Cancer Res. |
| Savage, Ken | Gosline, Supervisor | Zoology |
| Soltani, Mohammed | Douglas, Supervisor | Genetics |
| Johnson, Laura | Jefferies, Supervisor | Zoology |
| Tymchuck, Wendy | Devln, R./ Taylor, E. | Zoology |
| Wanner, Kevin | Isman, M./Theilmann, D. | Plant Sciences |
| Thorogood, Nancy | Brown, C. | Medical Genetics |

*b Ph. D. Thesis Defences*

| Candidate's Name | Supervisor | Dept. or Program |
|---|---|---|
| Ingman-Baker, J. | P. Candido, Supervisor | Biochemistry |
| Milsom, W. | D. Jones, Supervisor | Zoology |
| Rajput, Bhanu | R.C. Miller, Jr., Supervisor | Microbiology |
| Burke, Kathy | R.C. Miller, Jr., Supervisor | Microbiology |
| Hay, C. | P. Candido, Supervisor | Biochemistry |
| Christ, Barbara J. | C. Person, Supervisor | Botany |
| Kothari, Rashmi | E.P.M. Candido, Supervisor | Biochemistry |

| | | |
|---|---|---|
| Marchant, Gary | D. Holm, Supervisor | Zoology |
| Dobinson, Kathy | G. Spiegelman, Supervisor | Microbiology |
| Russnak, Rolin | P. Candido, Supervisor | Biochemistry |
| Barran, Paul | R. McMaster, Supervisor | Medical Genetics |
| Myers, Caroline | A. Griffiths, Supervisor | Botany |
| Webb, Vera | G. Spiegelman, Supervisor | Microbiology |
| Levy, David | T. Northcote, Supervisor | Zoology |
| Downing, Willa | P. Dennis, Supervisor | Biochemistry |
| Kawchuk, Lawrence | J. McPherson, Supervisor | Plant Science |
| Vickery, Daniel | A.J.F. Griffiths, Supervisor | Botany |
| Ofulue, Ester | P. Candido, Supervisor | Biochemistry |
| Rowe, Locke | G. Scudder, Supervisor | Zoology |
| Morgan, M.M. | | U. of, Australia |
| Margoulas, C. | | U. Ottawa |
| Downing, Willa | P. Dennis, Supervisor | Biochemistry |
| Aggrey, Samuel E. | K.M. Cheng, Supervisor | Animal Science |
| Leggett, David | P. Candido, Supervisor | Biochemistry |
| Zandstra, Peter | J. Piret, Supervisor | Chem.& Bio-Res Eng. |

**5. a) Departmental Service.....*continued***

*b) Ph. D. Thesis Defences*

| Candidate's Name | Supervisor | Dept. or Program |
|---|---|---|
| Guerette, Paul | J. Gosline, Supervisor | Zoology |
| Brunstein, John | C. Astell, Supervisor | Biochemistry |
| Pearsall, Isobel | J. Myers, Supervisor | Plant Sciences |
| Kyba, Michael | H. Brock, Supervisor | Zoology |
| Allina, Sandra | K. Douglas, Supervisor | Botany |
| Chow, Kevin | J. Davies, Supervisor | Microbiology |
| Lee, Sun Young | M. Krause Supervisor | Biol,, U. New Brunswick |
| Brownlie, J. C. | S. Whyard, Supervisor | Australian Natl. Univ. |
| Behzad, A. R. | J. Hogg, Supervisor | Pathology & Lab. Medicine |
| Crowe, E. | P. Candido, Supervisor | Biochemistry |
| Wang, Q | C. Douglas, Supervisor | Botany |
| Virag. A. | A. J. Griffiths, Supervisor | Botany |

2. Faculty Hiring Committees

William Milsom - Comparative Physiology (member of committee)
Hugh Brock - Developmental Biology (member of committee)
Don Moerman - Molecular Biology (member of committee)
Martin Adamson - Parasitology (Chairman)
Linda Matsuuchi - Cell Biologist (Chairman)
Susan Minaker - Develop. Biol. and Genetics Laboratory Inst.
Craig Berezowski - Genetics instructor
Vanessa Auld - Molecular Physiologist (member of committee)
Wolfram Tetzlaff - Neurophysiologist (member of committee)
Michael Withlock - Population Genetics (Chairman)
Sara Otto - Evolutionary Biologist (Chairman)
Women's URF, NSERC Committees
Erick Taylor - Fish Population Biology (Chairman)
CHORD Assist. Professor I (member of committee)

3. Tenure, Promotion Committees

- Several pre-1991

Chairman, James Berger, Promotion to Full Professor
Chairman, John Steeves, Promotion to Full Professor
Chairman, Hugh Brock, Promotion to Full Professor
Chairman, Martin Adamson, Promotion to Full Professor
Chairman, Linda Matsuuchi, Promotion to Associate Professor
Member, Vanessa Auld, Reappointment
Chairman, Taylor, Erick - Molecular Population Biology and Ecology - Promotion to Assist. Prof.
Member, Rosemary Redfield - Tenure and Promotion to Assoc. Professor
Member, Michael Whitlock - Reappointment
Member, Donald Moerman - Promotion to Full Professor
Chairman, Michael Whitlock - Tenure and Promotion to Assoc. Professor
Chair/Member, Wolfram Tetzlaff - Promotion to Full Professor
Member, Lee Gass - Promotion to Full Professor
Member, Vanessa Auld - Tenure and Promotion to Assoc. Professor
Member, Harold Kasinsky – Promotion to Full Professor
Chair/Member, Matt Ramer – Re-appointment Zoology/ICORD Review Committee
Chair/Member, Craig Berezowsky – Re-appointment Review Committee
Member. Michael Whitlock – Promotion to Full Professor

**5. a) Departmental Service.....*continued***

4. Zoology Curriculum Committee
   - Restructured all Zoology courses under Biology

5. Zoology Graduate Admissions and Scholarship Committee
   1986 – 1999 Member
   1989-1995 Chairman and Member
   1996-1999 Chairman, Scholarships and Fellowships Sub-committe

6. Zoology Research Development Committee
   1996 — > Member

**5. b) University Service**

1. Executive of Genetics Advisory Board - Genetics Program - 1980-1996
2. Genetics Graduate Admissions Committee - Member 1980-1995
3. University A & P Appeal Committee - Member 1989-continuing
4. Molecular Biology Training Program, Executive (became the Biotechnology Labs)
5. Molecular Biology Center, Building Comm. (became NCE building)
6. Graduate Council - Member 1990-continuing
7. Interdisciplinary Graduate Program Review Committee - Member 1990-91
8. University Graduate Fellowships Committee - Member 1992-94
9. Mentor Program, Faculty of Science 1993-continuing
10. UBC Science Undergraduate Society – career advisor
11. Dean's Committee on Promotion and Tenure (DACOPAT) - 2001 – present

**5 c) Community Service (science/education oriented)**

1. Lectures "Genetics & Modern Society" - Continuing Education Program
2. Volunteer for "Scientist in Schools" Program - 1993 - 1999
3. UBC Connect Program speaker 1995 - continuing

**5 d) Other professional**

1. Member, Insect Biotechnology Network Centre of Excellence
2. Associate, Canadian Genetic Disease Network Centre of Excellence
3. Member, International Collaboration on Repair Discoveries (ICORD)
4. Member, The Science Advisory Board
5. Grant Panel Member, MIUR (Italian Ministry for Education and University Research),

**6. RESEARCH GROUP:**

**a) Current funding ((current = 2002/2003; sources and amounts)**

| | | |
|---|---|---|
| 1999-2004 | NSERC Operating Grant | 59,450 /annum |
| 2001-2004 | NSERC Strategic Grant | 165,500 /annum |
| 2001-2006 | CIHR - Interdisciplinary Health Res. Team (J. Holden, leader) | 832,000 /annum |
| 2004-'05 | InCell Expression Systems, Inc. (contract) | 46,180 |
| 2002-2003 | Neuro Therapeutics, Inc. (contract) | 526,223 /annum |
| 2002- | CFI Grant – ICORD (Dr. John Steeves, leader) | 12,900,000 |
| 2002-'03 | CIHR POP | 100,000 /annum |
| 2002-'05 | NCIC Operating | 112,200 /annum |
| 2003-'04 | CIHR Operating (Co_PI with Wayne Riggs, Pharmaceutical Sci.) | 74,403 /annum |
| 2004-'05 | B.C. Neurotrauma Fund | 40,000 /annum |
| 2004 -'09 | NSERC Discovery Grant | 60,980 /annum |
| 2004 –'07 | CIHR Operating (Co-PI with Wayne Riggs, Pharmaceutical Sci.0 | 148,130 /annum |

**6. b) Current personnel - Research Group**

*Research Associates (Ph.D.s with at least 3 years prior experience as PDF)*

Dr. Craig Berezowsky
Dr. Sarbjet Ner
Dr. Thomas Pfeifer

*Post-doctoral Fellow*

Dr. Randall Mottus

*Ph.D. Students*

Gregory. Doheny
Pamella Kalas

*M.Sc.Students*

Omid Taub

*Honour's Thesis (Biology 449) Students*

Tyler Simpson

*Biology 448 (directed studies) Students*

| | |
|---|---|
| Duthie, Kia | McEvoy, Patrick |
| Min, Yoohee (Joy) | Mis, Jacek |
| Modesto, Dan | Wheeler, Lee |

**c) Major equipment (≥ $10K, date of purchase)**

-80° C Harris Ultra-freezer, 1996 NSERC Equip. grant to T.A.G
autoclave - Cell Group grant 1999
Nucleic Acid Phospho-imager System - Cell Group Grant 2000
GFP fluorescence Microscope - Cell Group Grant 2000
Luminometer- NSERC Equip grant to T.A.G $ 47,500
Real-time Confocal Microscope – CIHR equipment grant to Cell Group - $ 380,000
Tissue Culture Facility grant to Cell/Genetic Group $47,500

**d) Laboratory space and locations**

Biological Sciences Rooms: 3447, 3448, 1325, 2461, and shared equipment room 3444

**e) Collaborative and interdisciplinary research which has resulted in joint publication or grant applications**

Bertrand Clark - Department of Statistics
- Research on: Computer Modelling of Chromatin Assembly and Competition between limited Structural Components of Chromatin
- Manuscript: Theoretical and Applied Genetics - 181: 137-155. 1996.

George Spiegelman - Department of Microbiology
- Research on: gene structure, packaging and expression
- Manuscript: Gene 198: 229-236. 1997.

Wilf Jefferies - Biotechnology Laboratory
- Research on human melanotransferrin protein expression and function
- Manuscript: Protein Expression and Purification 15: 296-307. 1999

**e) Collaborative and interdisciplinary research which has resulted in joint publication or grant applications - *continued*.....**

David Theilmann - Agriculture Canada
- Research on: Use of Baculovirus Promoter Elements to Express Invertebrate and Vertebrate Proteins in Tissue Culture Cells
- NSERC Strategic Grant 1997-2000
- Several Disclosures on: Transformation and Protein Expression Vectors
- Patent filed in U.S. March 1997 to protect transformation/protein expression cassettes and systems
- PCT filed March 1998
- Individ. country grants: Japan, all of Europe, Australia - Sept - Dec. 1999

David Theilmann - Agriculture Canada
- Manuscripts: Gene 188: 183-190. 1997
  Gene 207 141-149. 1998

Virology 252: 65-81. 1998

Gunter Reuter – Martin Luther University, Halle Germany
- Research on: Chromatin structure – specifically on Klett a double stranded RNA binding protein
- Manuscript: submitted to Molec. and Gen. Genetics. 2001

Ron Reid – Pharmaceutical Sciences
- Research on Pharmacogenomics of Serotonin (5HT2A, 2B, and 2C) receptors
- CIHR Grant proposal and PCT Patent Application
- Provisional Patent Application on Diagnostic for 5HT2A variants and psychosis
- Manuscript: Pharmacogenetics, **13:** 107-118. 2003

Wayne Riggs – Pharmaceutical Sciences
- CIHR joint grant: Pharmacogenetics of enzymes that Metabolize Anti-cancer Drugs

# Grigliatti, Thomas A.

## SUMMARY OF PUBLICATIONS

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| **Total Published Papers:** | **100** |
| **Refereed Publications:** | **93** |
| **Papers submitted:** | **4** |
| **Papers in draft form:** | **4** |
| **Reviews:** | **3** |
| **Reviews:** | **3** |
| **Disclosure & Patents:** | **Disclosures = 8; Patents = 4** |
| **Theses: - completed:** | **38 total Ph.D = 9; M.Sc. = 16; B.Sc. = 13** |
| **- in progress:** | **Ph.D = 2; M.Sc. = 1** |
| **Technology Commercialized:** | **InsectSelect™** - Launched April 1999 |
| | **Human GPCR Assay & Screening Platform** – 2002 |
| **Invited Talks:** | **Symposia: 32 Distinguished Lectures: 23** |

## MAJOR PUBLICATIONS

SARANE, T., BOWEN, HERBERT G. LEBHERZ, MAN-CHUI POON, VICTOR S. CHOW & THOMAS A. GRIGLIATTI. The hemoglobins of *Artemia salina*. I. Determination of phenotype by genotype and environment. Comp. Biochem. Physiol. 31: 733-747. 1969.

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GRIGLIATTI, T., D.T. SUZUKI & R. WILLIAMSON. Temperature-sensitive mutations in *Drosophila melanogaster*. X. Developmental analysis of the paralytic mutation, *para*$^{ts}$. Devel. Biol. 28: 352-371. 1972.

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DUNN, R.J., S. HAYASHI, G.M. TENER, T.C. KAUFMAN & T.A. GRIGLIATTI. Genes coding for valine transfer ribonucleic acid-3b in *Drosophila melanogaster*. J. Mol. Biol. 128: 277-287. 1979.

DUNN, R., A.D. DELANEY, I.C. GILLAM, S. HAYASHI, G.M. TENER, T. GRIGLIATTI, V. MISRA, M.G. SPURR, D.M. TAYLOR & R.C. MILLER, Jr. Isolation and characterization of recombinant DNA pasmids carrying *Drosophila* tRNA genes. Gene 7: 197-215. 1979.

TENER, G.M., S. HAYASHI, R. DUNN, A. DELANEY, I.C. GILLAM, T.A. GRIGLIATTI, T.C. KAUFMAN & D.T. SUZUKI. Transfer RNA genes in *Drosophila melanogaster*. *In*: Transfer RNA: Biological Aspects. Cold Spring Harbor Laboratory. 1980.

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SINCLAIR, D.A.R., D.T. SUZUKI & T.A. GRIGLIATTI. Genetic and devlopmental analysis of a Temperature-Sensitive *Minute* Mutation of *Drosophila melanogaster*. Genetics 97: 581-606. 1981.

DEVLIN, R., D. HOLM & T.A. GRIGLIATTI. Autosomal dosage compensation in whole arm trisonics in Drosophila. Proc. Natl. Acad. Sci. U.S. 79: 1200-1204. 1982.

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SINCLAIR, D.A.R., LLOYD, Y. & GRIGLIATTI, T.A. Characterization of mutations that enhance position effect variegation in *Drosophila melanogaster*. Molec. and Gen. Genet., 216: 328-333. 1989.

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*of the Nucleus*. B. Hamkalo and S. Elgin (*eds.*). Academic Press, Inc. San Diego, Calif; pp. 587-627. 1992.

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PFEIFER, T. A., HEGEDUS, D. D., GRIGLIATTI, T. A., & THEILMANN, D. A. Baculovirus immediate-early promoter-mediated expression of the Zeocin™ resistance gene for use as a dominant selectable marker in Dipteran and Lepidopteran insect cell lines. Gene **188**: 183-190. 1997.

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PFEIFER, T. A., & GRIGLIATTI, T. A. Genetic Pest Management Strategies: A View of Targeted Pest Insect Management in the 21st Century. Agro-Food-Industry Hi-Tech **8**: 29 - 35. 1997.

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HEGEDUS, D. D., PFEIFER, T. A., HENDRY, J., THEILMANN, D. A., & GRIGLIATTI, T. A. A series of broad host range shuttle vectors for constituitive and inducible expression and secretion of heterologous proteins in insect cell lines. Gene **207**: 241-249. 1998

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WHALEN, J. H., AND GRIGLIATTI, T. A. Molecular characterization of a retrotransposon with target site preference in *Drosophila melanogaster, nomad,* and its relationship to other retrovirus-like mobile elements. Molec. Gen. Genet. **260**: 401-409. 1998.

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HEGEDUS, D.D., PFEIFER, T A., KENNARD, M.L., GABATHULER, W.A., JEFFRIES, D.A., THEILMANN, D.A., AND GRIGLIATTI, T. A. Intergenic Differences in the Expression of Human Melanotransferrin in Insect Cell Lines. Protein Expression and Purification **15**: 296-307 1999.

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PFEIFER, T. A., HEGEDUS, D., WANG, Y-J., ZHAO, Y., MEREDITH, J., BROCK, J. W. PHILLIPS, J.E., GRIGLIATTI, T. A. & THEILMANN, D. A . Analysis of an insect neuropeptide, *Schistocerca gregaria*, ion transport protein (ITP), expressed in insect cell systems. Archives of Insect Biochemistry and Physiology. **42**: 245-252. 1999.

LLOYD, V. K., SINCLAIR, D. A., WENNBERG, R., WARNER, T. S., HONDA, B. M., & GRIGLIATTI, T. A. A genetic and molecular characterization of the*garnet* gene of *Drosophila melanogaster*. Genome **42**: 1183-1193. 1999

MOTTUS, R., SOBEL, R., & GRIGLIATTI, T. A. Mutations in a Histone Deacetylase Gene Suppress Position-effect Variegation in Drosophila. Genetics **154**: 657-668. 2000.

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GRIGLIATTI, T. A., PFEIFER, T., & MEISTER, G. TAC-TICS: Transposon-based Insect Control Systems. In: Enhancing Biocontrol and Handling Risks. Eds. M. Vurro, Gressel, J., Butt, T., Harman, D., Nuss, D., Sands, D., St. Leger, R. (eds). NATO Science Series, IOS Press, Amsterdam, The Netherlands. Vol. 339, pp . 2001.

PFEIFER, T. A., GUARNA, M. M., KWAN, E. M. LESNICKI, G., THEILMANN, D. A., GRIGLIATTI, T. A. & KILBURN D. G. Expression analysis of a modified FactorX in stable insect cell lines. Protein Expression and Purification **23**: 233-241. 2001.

NER,S. S., BLANK, T., PEREZ-PARALLÉ, M. L., GRIGLIATTI, T. A., BECKER, P. B., & TRAVERS, A. A. HMG-D and Histone H1 Interplay during Chromatin Assembly and Early embryogenesis. J. Biological Chemistry **276**: 37569-37576. 2001.

LLOYD V. K, ALPERYN, M., SINCLAIR, D. A. R., & GRIGLIATTI T. A. *Enhancer of garnet/δAP-3* is a cryptic allele of the *white* gene and identifies the intracellular transport system for the *white* protein. Genome **45:** 296-312. 2002.

NER. S.S, HARRINGTON, M., & GRIGLIATTI, T. A. A Role for the *Drosophila* SU(VAR)3-9 Protein in Chromatin Organization at the Histone Gene Cluster and a Molecular Basis for Suppression of Position-effect Variegation. Genetics **162:** 1763-1774. 2002.

HARVEY, L., REID, R.E., MA, C., KNIGHT, P.J.K., PFEIFER, T.A., & GRIGLIATTI, T. A.. Human Genetic Variations in the 5HT2A Receptor: A Single Nucleotide Polymorphism Identified with Altered Response to Clozapine. Pharmacogenetics, **13:** 107-118. 2003.

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KNIGHT, P. J. K., PFEIFER, T. A., & GRIGLIATTI, T.A. A Functional Assay for G-Protein Coupled Receptors Using Stably Transformed Insect Tissue Culture Cell Lines. Analytical Biochemistry **320:** 88-103. 2003

GORENFLO, V. M., PFEIFER, T. A., LESNICKI, G., KWAN, E. M., GRIGLIATTI, T. A.,KILBURN, D. G., and PIRET, J. M. Production of a Self-activating CMB-Factor X Fusion Protein In a Stable Transformed Sf9 Insect Cell Line using High Cell Density Perfusion Culture. Cytotechnology *In Press*

LLOYD, V. K., DYMENT, D., SINCLAIR, D., & GRIGLIATTI, T. A., Different Patterns of Gene Silencing in Position-Effect Variegation. Genome. *In press*

KNIGHT, P. & GRIGLIATTI, T. A. Diversity of Lepidopteran G proteins; partial sequences of six novel G protein alpha subunits from insect cell lines submitted to Insect Biochemistry and Molecular Biology (*accepted* July 2004)

BECKSTEAD R. B., NER S., HALES K. G., GRIGLIATTI T. A., BAKER B. S., BELLEN H. J. Bonus, a *Drosophila* TIF1 homologue, is a chromatin associated protein that acts as an enhancer and suppressor of position effect variegation. Genetics (*accepted* July 2004)

KNIGHT, P. & GRIGLIATTI, T. A. Chimeric G proteins extend the range of insect cell-based functional assays for human G protein-coupled receptors. J. Receptors and Signal Transduction (*accepted* July 2004)

## Manuscripts in Draft form or Submitted

NER, S. S., KALAS, P., and GRIGLIATTI, T. A. A Mosaic of his Units at the Drosophila Histone Cluster: A Regulatory Mechanism to Control Histone Gene Expression. submitted to Molecular Cell

SINCLAIR, GRAHAM, FFEIFER, TOM A., GRIGLIATTI, THOMAS A., & CHOY, FRANCIS Y. M. Secretion of human glucocerebrosidase from stable transfected insect cells using native signal sequences. Protein Expression & Purification.

BEREZOWSKY, CRAIG M. S., PFEIFER, TOM A., & GRIGLIATTI, THOMAS A. Expression of human canabinoid receptors in insect expression systems: evidence for a cannabinoid-responsive receptor in Drosophila. submitted to European Journal of Pharmacology

DOHENY, J. G., KALAS, P., & GRIGLIATTI, T. A. A Comparison of Telomeric and Centromeric position effects in Drosophila. submitted to *Genetics*

MEISTER, G. A. & GRIGLIATTI, T. A. Dispersal and accumulation of *hobo* elements in experimental populations of *Drosophila melanogaster*. submitted to Genetics

KRAUSS, V., O'GRADY M. , KUHFITTIG S., HOFFMANN J., DORN R., GRIGLIATTI T. A., & REUTER G. KLETT, a *Drosophila* Chromatin Protein with dsRNA Binding Motifs interacts with the heterochromatin-associated SU(VAR)3-9 Protein. Molecular Genetics and Genomics

HARRINGTON, M. J. & GRIGLIATTI, T. A. A genetic analysis of the *Su(var)3-9/eIF2γ* discistronic locus of *Drosophila melanogaster* reveals no functional relationship between its genes. Molecular Genetics and Genomics

NER, S. S & GRITGLIATTI, T. A. Organization and Regulation of the Histone Gene Cluster: A Role for Drosophila SU(VAR)3-9 Protein and the Silencing Machinery

## PATENTS and DISCLOSURES

DISCLOSURES

PFEIFER, T.A. & T.A. GRIGLIATTI. Nuclear DNA markers for the differentiation of Gypsy Moth species and races. (UBC UIL file: 93-003)

PFEIFER, T.A. & T.A. GRIGLIATTI. Nuclear DNA markers for the differentiation of Asian, North American and hybid crosses of these Two Gypsy Moths (UBC UIL file: 94-043)

GRIGLIATTI, T. A., THEILMANN, D. A., PFEIFER, T. A. & HEGEDUS, D. D. A Zeocin resistance shuttle vector for use in *E. coli* and insect cells. (UBC UIL file: 96-018)

PFEIFER, T. A., HEGEDUS, D. D., THEILMANN, D. A., & T. A. GRIGLIATTI. Transposon based gene amplification sysytem for enhancing protein production from eucharyotic cells. (UBC UIL file: 96-068).

GRIGLIATTI, T. A., KNIGHT, P., & PFEIFER, T. Generic Functional Assay for GPCR using stable Insect Cells. (UBC UIL file: 98-055).

GRIGLIATTI, T. A. & NER, S. Molecular tools to be used for the Identification of "insulator" elements to be used for gene therapy. (UBC UIL file: 00-13D).

GRIGLIATTI, T. A., & KNIGHT P. Production and selection of peptide ligands for receptors via a self-selecting loop technology. (UBC UIL file: 01-034).

GRIGLIATTI, T. A., REID. R E., HARVEY, L., & MA, C.
Identification of Serotonin Variant Alleles with altered response to drugs for schizophrenia and depression (03-051) Provisional PCT filed 2002

PATENTS

1. GRIGLIATTI, T. A., THEILMANN, D. A., PFEIFER, T. A. & HEGEDUS, D. D.
Insect Expression Systems filed March 27, 1997

This is an 88 page patent with 20 Figures; it represents a substantial amount of work and covers our promoters, our shuttle vectors, our expression cassettes, our transposon based transformation and amplification technology, our cell line with inducibly controlled transposase and its derivatives, all assemblies based on these components as well as 3 cell lines expressing the human melanotransferrin p97 protein and the ITP expressing cell lines.

PTC Patent filed on above: March, 1998.

Filed in United States, all European Countries, Canada, Japan, and Australia: 1998-2002.

2. GRIGLIATTI, T. A., KNIGHT, P. J. K., & PFEIFER T. A.
Functional Assay for G-Protein Coupled Receptors Based on Insect Cells
Provisional Application for Patent , October 24, 2000
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3. GRIGLIATTI, T. A., REID. R E., HARVEY, L., & MA, C.
Variance Identification in Serotonin Alleles (03-051) PCT filed 2002

4. GRIGLIATTI, T. A., & NER, S.
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PFEIFER, T. A. Expression of heterologous proteins in stable insect cell culture, Current Opinion in Biotechnology. 9: 518-521. 1998. Tom Pfeifer is a Research Associate in our lab and is supported by our NSERC Strategic Grant. While I assisted with the manuscript, I did not add my name to it.

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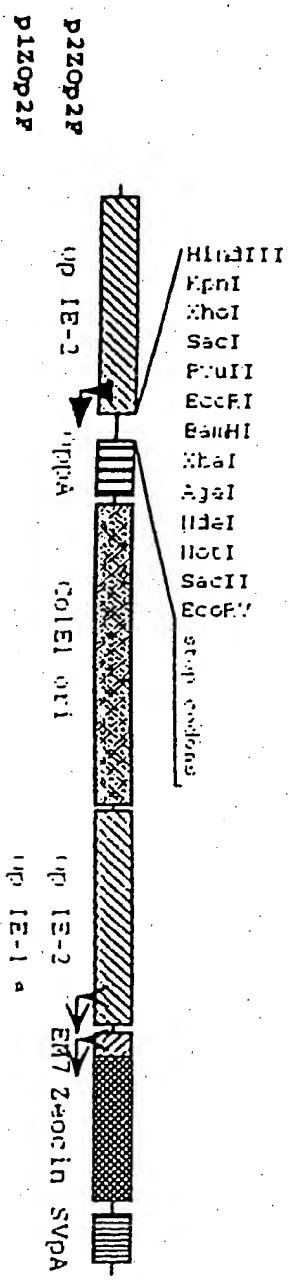
## ABSTRACTS (Published & presented at Meetings)

Frankly, I no longer keep a running list or even a count of the total abstracts published and presented at meetings. There have been more than 100 talks/abstracts presented at science meetings.



Plasmid Name: p2HF

Size: 3.2 kb

Vector Base: p2.2ηp2F

Bacterial Markers: Hygr Sougfind

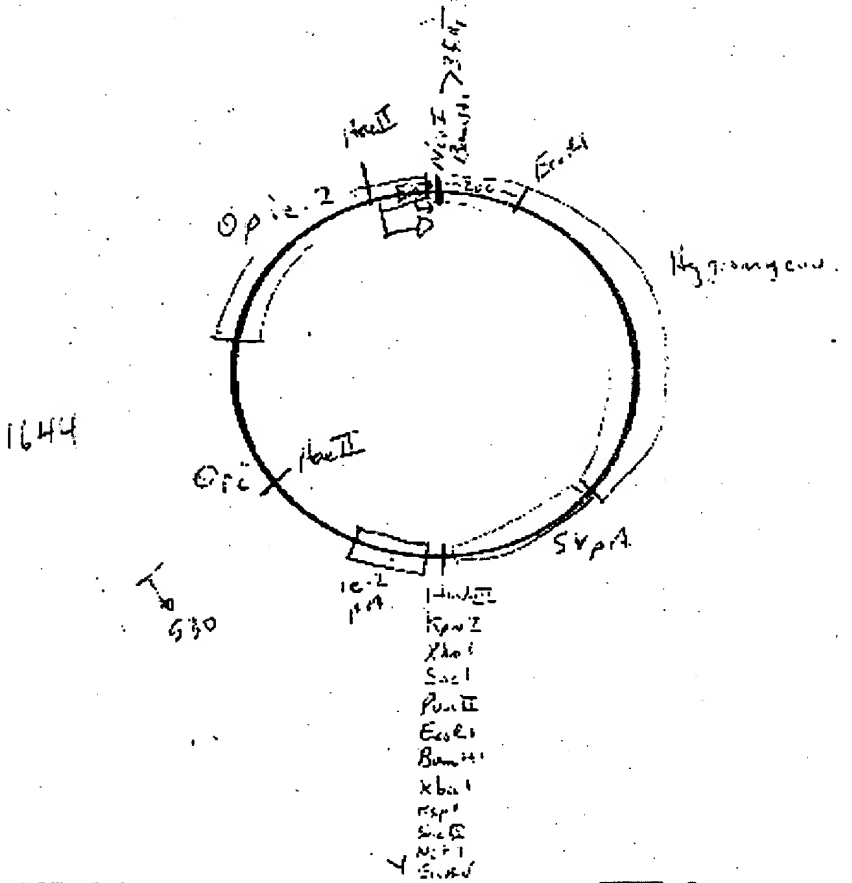
Eukaryotic Markers: Hygr.

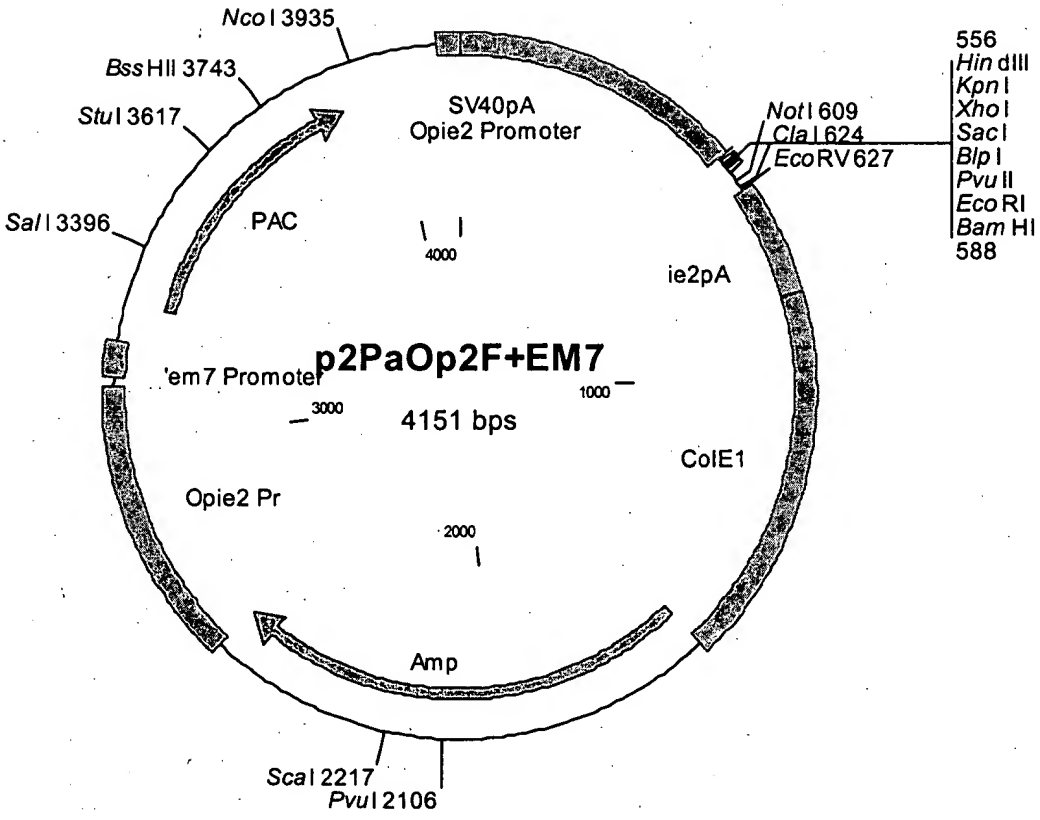
Creator: TP



Bacterial Strain: DH5α

Insert Description: BamHI(Fill in) / HindIII 1.3 kb fragment from pHygBKS containing the hygromycin resistance gene and a SVpA tail.



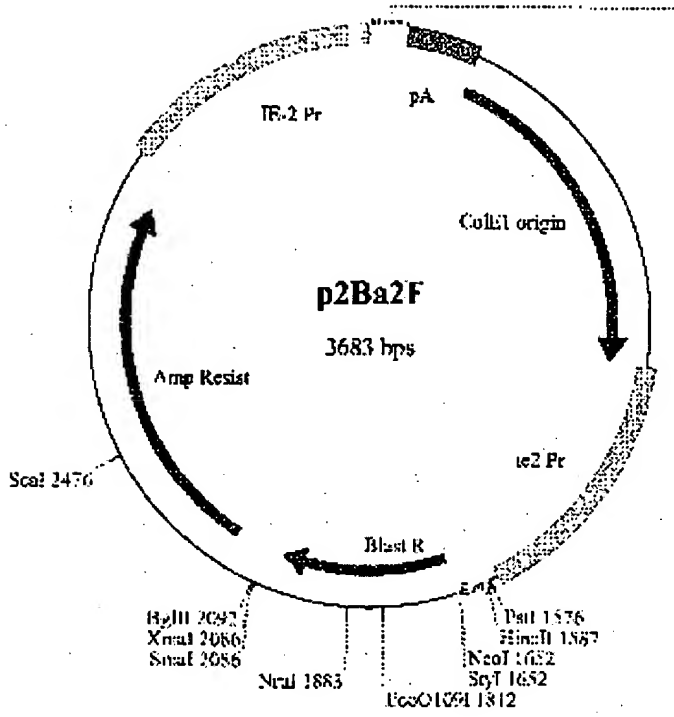



A PstI/NcoI fragment from p2Z2F (blunted with exonuclease) containing the EM7 promoter was inserted into the Pst1 site of p2PAOp2F (blunted with exonulcease)

For bacterial selection on Puromycin – add 200 ug/ml Puromycin to Low salt LB, and incubate plates at 37°C for a least 2 days.

For bacterial selection on Ampicillin – add 100 ug/ml to LB plates and incubate overnight at at 37°C.

For insect cell selection on Puromycin – add 2 ug/ml (micrograms/ml) of Puromycin to media and transfer cells once confluent.

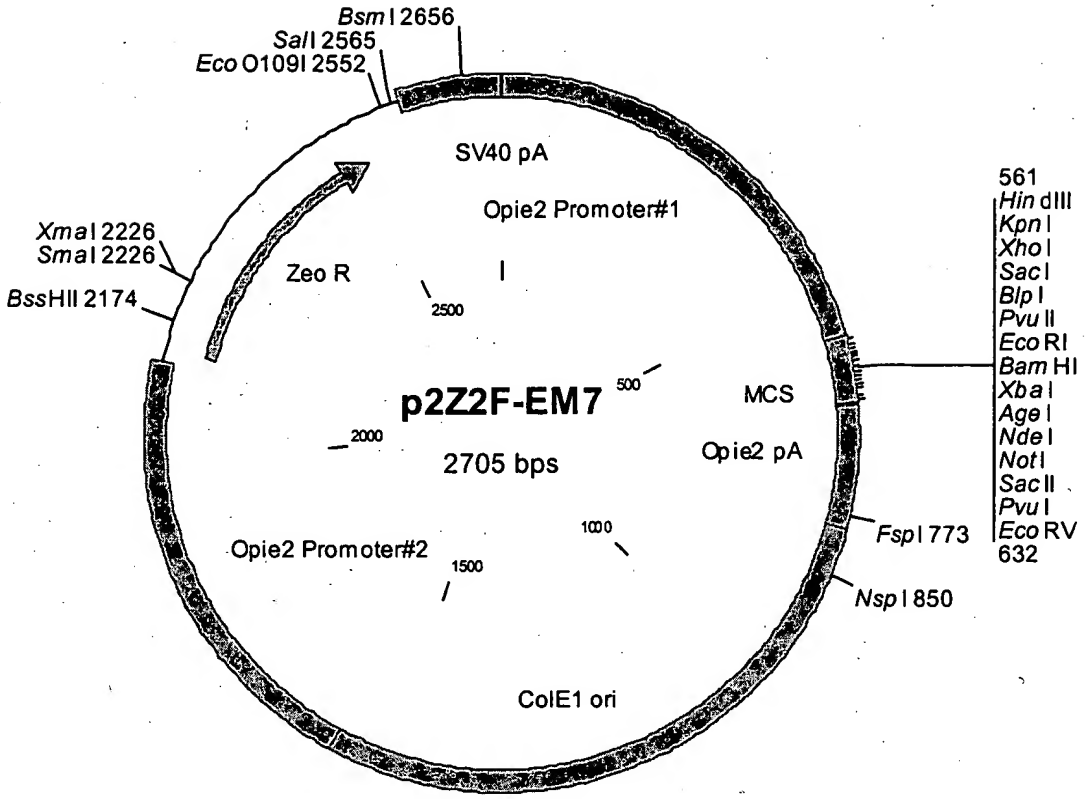



Molecule Features:

| Type | Start | End | Name | Description |
|---|---|---|---|---|
| REGION | 1 | 77 | | MCS from 2F |
| REGION | 78 | 229 | pA | 1.82 pA |
| GENE | 230 | 1008 | ColE1 origin | |
| REGION | 1009 | 1552 | ie2 Pr | Opie2 Promoter |
| REGION | 1580 | 1651 | | EM7 Promoter |
| GENE | 1654 | 2053 | Blast R | Blasticidin Resist |
| GENE | 2172 | 3033 | Amp Resist | |
| REGION | 3128 | 3676 | IE-2 Pr | OPie2 Promoter |
| REGION | 3638 | 3657 | | 2S Forward Primer |

Enzymes (22 sites) LAA RES

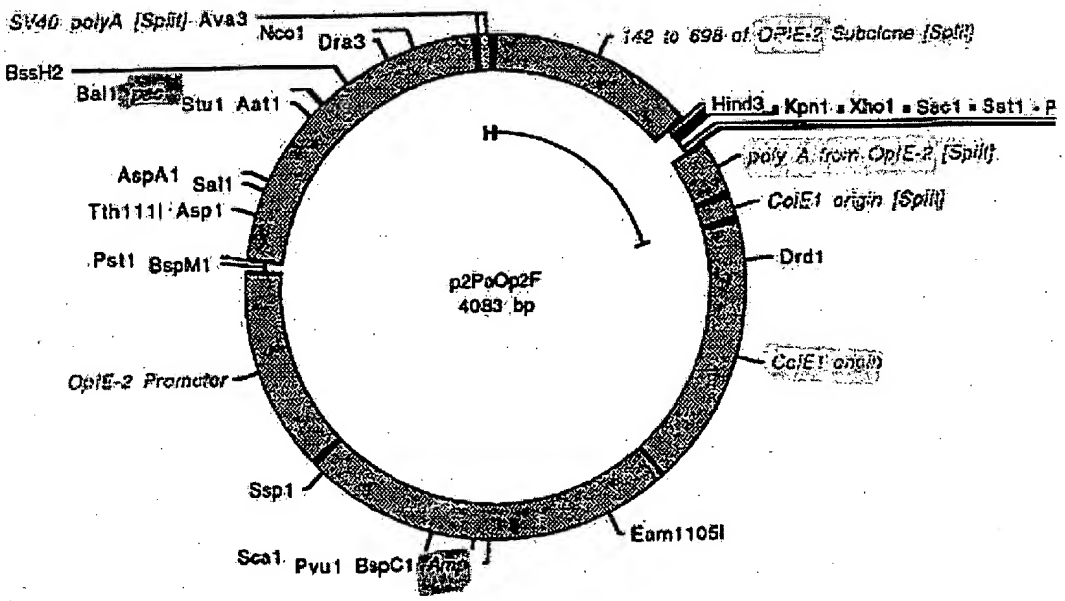
| | | | | | | | |
|---|---|---|---|---|---|---|---|
| HindIII | 1, | KpnI | 7, | XhoI | 13, | SacI | 1 |
| EcoRI | 25, | BamHI | 33, | XbaI | 39, | AgeI | 4 |
| NdeI | 50, | NotI | 55, | SacII | 59, | EcoRV | 7 |
| PstI | 1576, | HincII | 1587, | NcoI | 1652, | StyI | 165 |
| Eco0109I | 1812, | NruI | 1883, | SmaI | 2086, | XmaI | 208 |
| BglII | 2092, | ScaI | 2476, | | | | |

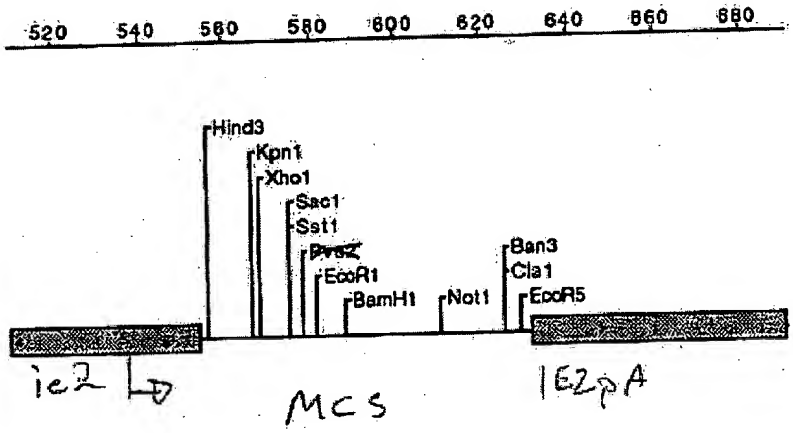


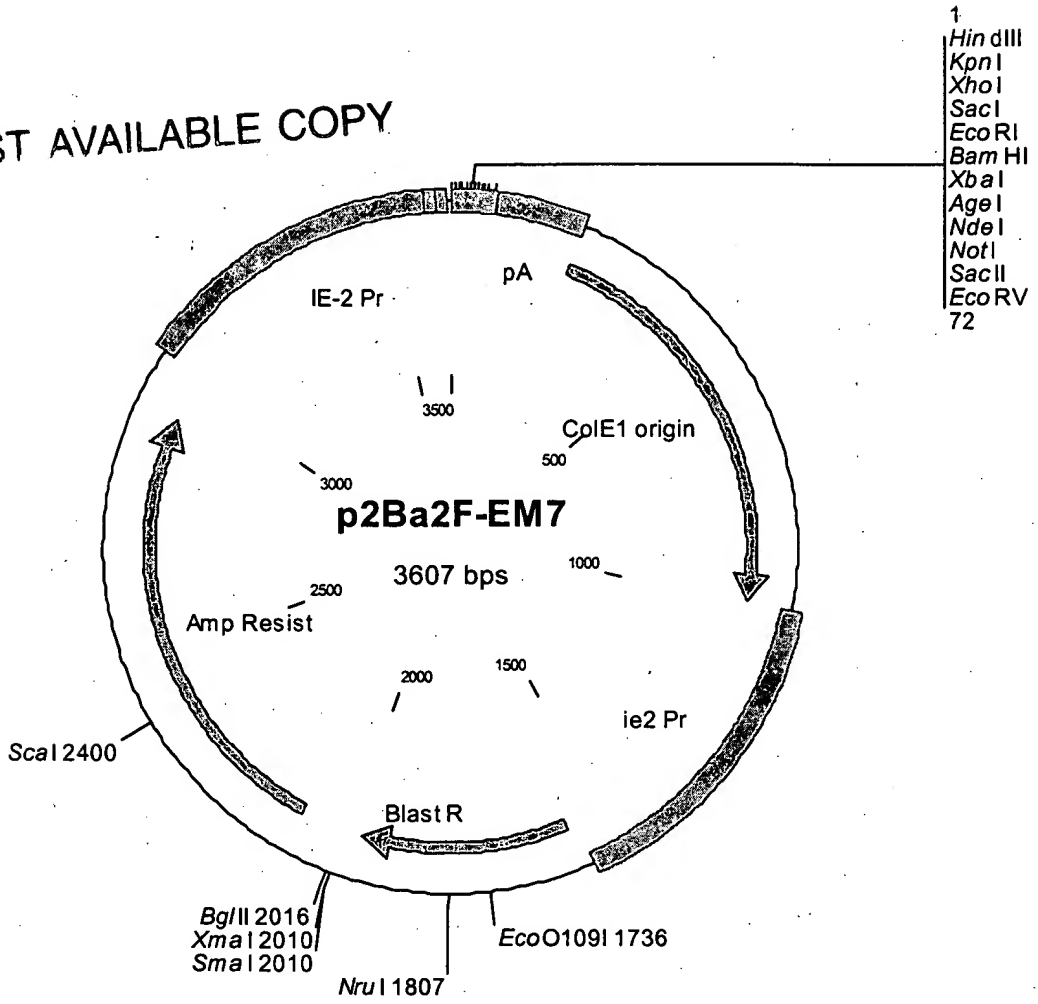

p2Zop2F with EM7 promoter removed.
Digested p2Zop2F with PstI (blunted)/NcoI (filled in) and ligated.

For bacterial selection on Zeocin – add 25 ug/ml Zeocin to Low salt LB, and incubate plates at 37°C for 24-48 hrs.

For insect cell selection on Zeocin – add 750 ug/ml (micrograms/ml) of Zeocin to media and transfer cells once confluent.






p2Ba2F with EM7 promoter removed
p2Ba2F cleaved with PstI (exo-blunted)/NcoI (filled in) and ligated

For bacterial selection on Blasticidin – add 100 ug/ml Blasticidin to Low salt LB, and incubate plates at 37°C for a least 2 days.

For bacterial selection on Ampicillin – add 100 ug/ml to LB plates and incubate overnight at at 37°C.

For insect cell selection on Blasticidin – add 25 ug/ml (micrograms/ml) of Blasticidin to media and transfer cells once confluent